

BONANZA CREEK ENERGY OPERATING

Well Name: **State Seventy Holes K-O-3HNB**

Surface Location: State Seventy Holes K-O-3HNB Pad Sec.3-T4N-R62W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

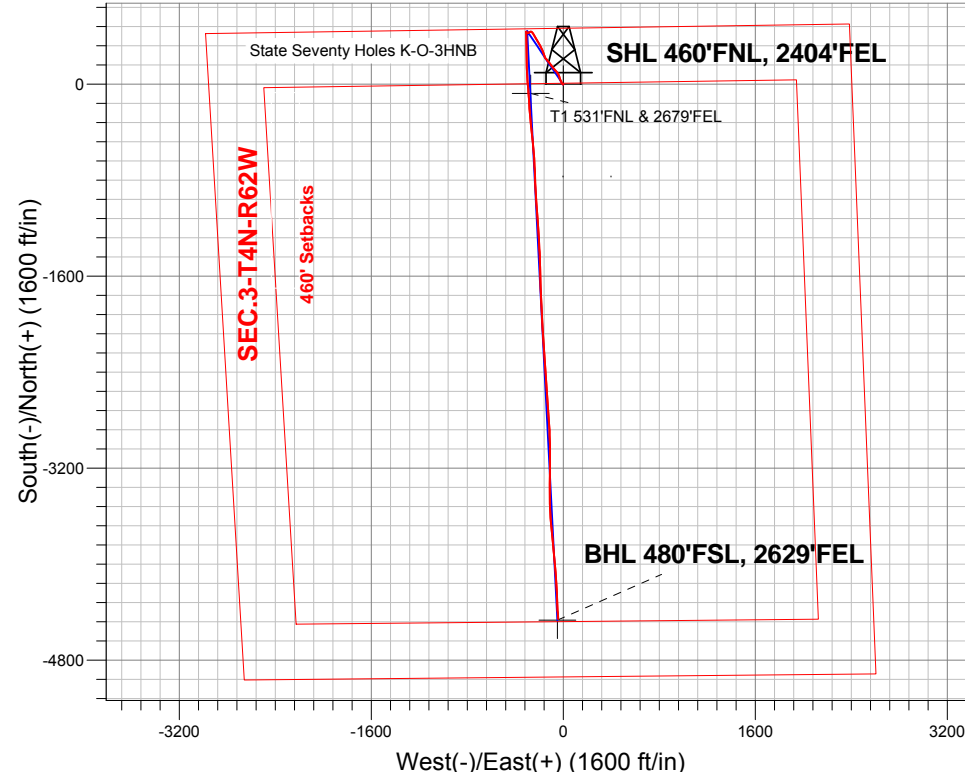
Ground Elevation: 4551.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1371735.32	3331282.77	40.347720	-104.311400	

RKB - 13' WELL @ 4564.0ft (RKB - 13')

FINAL SURVEY

Projected Bottom Hole Location
10836'MD 6135'TVD 4456'S & 44'W of SHL
88.4 degree Incl @ 176.3 degree AZM



ENSIGN
Directional

State Seventy Holes K-O-3HNB Pad Sec.3-T4N-R62W
State Seventy Holes K-O-3HNB

13:35, November 18 2013

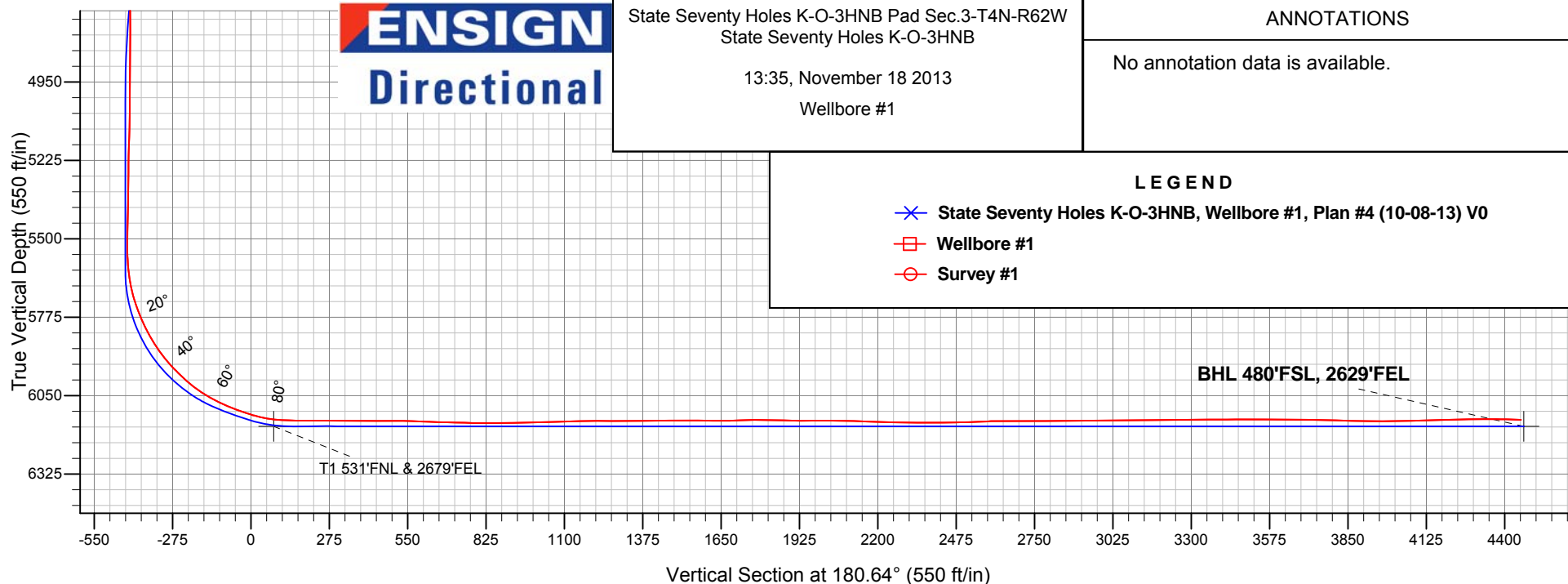
Wellbore #1

ANNOTATIONS

No annotation data is available.

LEGEND

- X State Seventy Holes K-O-3HNB, Wellbore #1, Plan #4 (10-08-13) V0
- Wellbore #1
- Survey #1





BONANZA CREEK ENERGY OPERATING

SEC.3-T4N-R62W

State Seventy Holes K-O-3HNB Pad Sec.3-T4N-R62W

State Seventy Holes K-O-3HNB

Wellbore #1

Survey: Survey #1

Standard Survey Report

18 November, 2013

Company:	BONANZA CREEK ENERGY OPERATING	Local Co-ordinate Reference:	Well State Seventy Holes K-O-3HNB
Project:	SEC.3-T4N-R62W	TVD Reference:	WELL @ 4566.0ft (Ensign Rig #128 - RKB - 15')
Site:	State Seventy Holes K-O-3HNB Pad Sec.3-T4N-R62W	MD Reference:	WELL @ 4566.0ft (Ensign Rig #128 - RKB - 15')
Well:	State Seventy Holes K-O-3HNB	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.3-T4N-R62W, Weld County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site	State Seventy Holes K-O-3HNB Pad Sec.3-T4N-R62W				
Site Position:		Northing:	1,371,735.35 ft	Latitude:	40.347720
From:	Lat/Long	Easting:	3,331,282.77 ft	Longitude:	-104.311400
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.77 °

Well	State Seventy Holes K-O-3HNB					
Well Position	+N/-S	0.0 ft	Northing:	1,371,735.32 ft	Latitude:	40.347720
	+E/-W	0.0 ft	Easting:	3,331,282.77 ft	Longitude:	-104.311400
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,551.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/4/2013	8.30	67.00	52,911

Design	Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0	180.64	

Survey Program	Date	11/18/2013			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
120.0	10,836.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
1.0	0.00	179.70	1.0	0.0	0.0	0.0	0.25	0.25	0.00
SHL 460'FNL, 2404'FEL									
120.0	0.30	179.70	120.0	-0.3	0.0	0.3	0.25	0.25	0.00
186.0	0.30	196.90	186.0	-0.7	0.0	0.7	0.14	0.00	26.06
397.0	0.40	262.70	397.0	-1.3	-0.9	1.3	0.18	0.05	31.18
482.0	0.40	231.50	482.0	-1.5	-1.5	1.5	0.25	0.00	-36.71
606.0	0.60	275.10	606.0	-1.7	-2.5	1.7	0.33	0.16	35.16
729.0	0.70	275.10	729.0	-1.6	-3.8	1.6	0.08	0.08	0.00
851.0	1.00	296.60	851.0	-1.0	-5.5	1.1	0.35	0.25	17.62
974.0	1.40	312.40	973.9	0.5	-7.6	-0.4	0.42	0.33	12.85
1,097.0	2.60	329.30	1,096.9	3.9	-10.1	-3.8	1.08	0.98	13.74

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Site:	State Seventy Holes K-O-3HNB Pad Sec.3-T4N-R62W	MD Reference:	WELL @ 4566.0ft (Ensign Rig #128 - RKB - 15')
Well:	State Seventy Holes K-O-3HNB	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
1,219.0	3.60	336.50	1,218.7	9.8	-13.1	-9.6	0.88	0.82	5.90
1,342.0	4.90	333.30	1,341.3	18.0	-17.0	-17.8	1.07	1.06	-2.60
1,471.0	5.50	333.70	1,469.8	28.5	-22.2	-28.2	0.47	0.47	0.31
1,594.0	4.60	335.40	1,592.3	38.2	-26.9	-37.9	0.74	-0.73	1.38
1,717.0	5.70	343.20	1,714.8	48.6	-30.7	-48.2	1.06	0.89	6.34
1,840.0	7.40	342.80	1,837.0	62.0	-34.8	-61.6	1.38	1.38	-0.33
1,962.0	10.60	334.70	1,957.5	79.6	-41.9	-79.2	2.81	2.62	-6.64
2,084.0	8.90	323.30	2,077.8	97.3	-52.3	-96.7	2.10	-1.39	-9.34
2,207.0	8.40	318.70	2,199.4	111.7	-64.0	-111.0	0.69	-0.41	-3.74
2,330.0	9.90	320.00	2,320.8	126.6	-76.7	-125.7	1.23	1.22	1.06
2,453.0	9.40	321.90	2,442.1	142.6	-89.7	-141.6	0.48	-0.41	1.54
2,575.0	10.10	320.10	2,562.3	158.6	-102.7	-157.5	0.63	0.57	-1.48
2,700.0	11.70	319.40	2,685.0	176.7	-118.0	-175.3	1.28	1.28	-0.56
2,825.0	8.30	318.60	2,808.1	193.1	-132.2	-191.6	2.72	-2.72	-0.64
2,948.0	8.50	323.80	2,929.8	207.0	-143.4	-205.4	0.64	0.16	4.23
3,073.0	7.60	329.10	3,053.6	221.6	-153.1	-219.9	0.93	-0.72	4.24
3,197.0	8.60	345.40	3,176.3	237.6	-159.7	-235.8	2.01	0.81	13.15
3,322.0	12.00	341.10	3,299.3	258.9	-166.2	-257.1	2.79	2.72	-3.44
3,446.0	13.80	336.60	3,420.2	284.7	-176.3	-282.7	1.66	1.45	-3.63
3,570.0	15.80	331.40	3,540.1	313.1	-190.3	-311.0	1.93	1.61	-4.19
3,695.0	13.80	329.50	3,660.9	340.9	-206.0	-338.6	1.65	-1.60	-1.52
3,821.0	13.70	330.70	3,783.3	366.9	-220.9	-364.4	0.24	-0.08	0.95
3,945.0	13.00	329.30	3,904.0	391.7	-235.2	-389.0	0.62	-0.56	-1.13
4,070.0	11.40	329.80	4,026.1	414.4	-248.6	-411.6	1.28	-1.28	0.40
4,195.0	8.70	315.70	4,149.2	431.9	-261.4	-428.9	2.91	-2.16	-11.28
4,319.0	4.30	263.50	4,272.5	438.1	-272.6	-435.0	5.60	-3.55	-42.10
4,445.0	3.40	238.00	4,398.2	435.6	-280.5	-432.4	1.52	-0.71	-20.24
4,569.0	3.20	221.70	4,522.0	431.0	-285.9	-427.8	0.77	-0.16	-13.15
4,693.0	2.30	245.40	4,645.9	427.4	-290.4	-424.1	1.15	-0.73	19.11
4,817.0	2.60	285.30	4,769.8	427.1	-295.4	-423.8	1.37	0.24	32.18
4,941.0	1.80	274.00	4,893.7	428.0	-300.1	-424.6	0.73	-0.65	-9.11
5,066.0	1.00	285.90	5,018.6	428.4	-303.1	-425.0	0.68	-0.64	9.52
5,191.0	4.00	304.30	5,143.5	431.2	-307.7	-427.7	2.45	2.40	14.72
5,316.0	0.10	323.50	5,268.4	433.7	-311.4	-430.2	3.12	-3.12	15.36
5,441.0	1.40	16.20	5,393.4	435.3	-311.0	-431.8	1.07	1.04	42.16
5,535.0	1.00	6.70	5,487.4	437.2	-310.6	-433.7	0.47	-0.43	-10.11
5,566.0	0.50	9.50	5,518.4	437.6	-310.6	-434.1	1.62	-1.61	9.03
5,598.0	1.10	187.90	5,550.4	437.4	-310.6	-433.9	5.00	1.88	557.50
5,629.0	3.70	183.70	5,581.3	436.1	-310.7	-432.6	8.40	8.39	-13.55
5,660.0	6.40	180.40	5,612.2	433.4	-310.8	-429.9	8.76	8.71	-10.65
5,691.0	9.10	180.20	5,642.9	429.2	-310.8	-425.7	8.71	8.71	-0.65
5,723.0	12.40	181.60	5,674.3	423.3	-310.9	-419.8	10.34	10.31	4.38
5,755.0	15.90	181.30	5,705.4	415.5	-311.1	-411.9	10.94	10.94	-0.94
5,787.0	19.10	180.90	5,735.9	405.8	-311.3	-402.3	10.01	10.00	-1.25
5,817.0	21.80	180.90	5,764.0	395.4	-311.4	-391.8	9.00	9.00	0.00
5,848.0	24.50	180.70	5,792.5	383.2	-311.6	-379.6	8.71	8.71	-0.65
5,879.0	27.60	179.30	5,820.3	369.6	-311.6	-366.0	10.19	10.00	-4.52
5,910.0	30.20	176.00	5,847.5	354.6	-311.0	-351.1	9.84	8.39	-10.65
5,942.0	32.80	174.10	5,874.8	337.9	-309.5	-334.4	8.70	8.13	-5.94
5,973.0	36.10	174.90	5,900.3	320.5	-307.8	-317.0	10.74	10.65	2.58
6,004.0	39.70	177.80	5,924.8	301.5	-306.7	-298.0	12.95	11.61	9.35
6,036.0	42.90	179.50	5,948.8	280.4	-306.2	-276.9	10.60	10.00	5.31
6,067.0	45.60	179.20	5,971.0	258.8	-305.9	-255.3	8.74	8.71	-0.97

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Well:	State Seventy Holes K-O-3HNB	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
6,098.0	48.10	179.30	5,992.2	236.1	-305.6	-232.7	8.07	8.06	0.32
6,129.0	51.30	180.00	6,012.3	212.5	-305.5	-209.1	10.47	10.32	2.26
6,161.0	54.60	180.60	6,031.5	187.0	-305.6	-183.5	10.42	10.31	1.88
6,191.0	58.30	180.20	6,048.1	162.0	-305.8	-158.5	12.38	12.33	-1.33
6,223.0	62.00	178.60	6,064.1	134.2	-305.5	-130.8	12.35	11.56	-5.00
6,254.0	65.80	176.90	6,077.7	106.4	-304.4	-103.0	13.21	12.26	-5.48
6,285.0	68.90	175.80	6,089.6	77.9	-302.6	-74.5	10.52	10.00	-3.55
6,317.0	69.40	175.80	6,101.0	48.0	-300.4	-44.7	1.56	1.56	0.00
6,348.0	71.20	176.00	6,111.5	18.9	-298.3	-15.6	5.84	5.81	0.65
6,379.0	74.40	175.30	6,120.6	-10.6	-296.0	13.9	10.55	10.32	-2.26
6,411.0	78.70	175.10	6,128.1	-41.6	-293.4	44.9	13.45	13.44	-0.63
6,442.0	83.10	175.50	6,133.0	-72.1	-290.9	75.4	14.25	14.19	1.29
6,450.1	84.02	175.53	6,133.9	-80.2	-290.3	83.4	11.29	11.29	0.32
T1 531°FNL & 2679°FEL									
6,473.0	86.60	175.60	6,135.8	-102.9	-288.5	106.1	11.29	11.29	0.32
6,503.0	88.30	175.80	6,137.1	-132.8	-286.3	136.0	5.71	5.67	0.67
6,565.0	90.30	176.70	6,137.8	-194.6	-282.2	197.8	3.54	3.23	1.45
6,596.0	90.40	175.60	6,137.7	-225.5	-280.2	228.7	3.56	0.32	-3.55
6,627.0	89.90	175.80	6,137.6	-256.5	-277.8	259.6	1.74	-1.61	0.65
6,657.0	89.90	175.50	6,137.6	-286.4	-275.6	289.5	1.00	0.00	-1.00
6,688.0	89.00	174.90	6,137.9	-317.3	-273.0	320.3	3.49	-2.90	-1.94
6,719.0	89.30	174.90	6,138.4	-348.1	-270.2	351.2	0.97	0.97	0.00
6,750.0	89.50	174.90	6,138.7	-379.0	-267.4	382.0	0.65	0.65	0.00
6,780.0	90.00	174.10	6,138.8	-408.9	-264.6	411.8	3.14	1.67	-2.67
6,811.0	90.30	173.90	6,138.8	-439.7	-261.3	442.6	1.16	0.97	-0.65
6,841.0	90.50	172.80	6,138.6	-469.5	-257.9	472.4	3.73	0.67	-3.67
6,872.0	90.20	172.50	6,138.4	-500.2	-253.9	503.1	1.37	-0.97	-0.97
6,903.0	88.70	173.70	6,138.7	-531.0	-250.2	533.8	6.20	-4.84	3.87
6,935.0	88.10	175.60	6,139.6	-562.9	-247.2	565.6	6.22	-1.88	5.94
6,966.0	88.20	175.10	6,140.6	-593.7	-244.7	596.5	1.64	0.32	-1.61
6,997.0	87.90	177.60	6,141.6	-624.7	-242.7	627.4	8.12	-0.97	8.06
7,028.0	88.00	177.40	6,142.7	-655.6	-241.4	658.3	0.72	0.32	-0.65
7,058.0	88.50	177.60	6,143.6	-685.6	-240.0	688.2	1.79	1.67	0.67
7,089.0	88.50	177.90	6,144.4	-716.5	-238.8	719.2	0.97	0.00	0.97
7,120.0	88.40	178.50	6,145.3	-747.5	-237.9	750.1	1.96	-0.32	1.94
7,151.0	89.10	177.80	6,146.0	-778.5	-236.9	781.1	3.19	2.26	-2.26
7,181.0	89.90	177.80	6,146.2	-808.5	-235.7	811.1	2.67	2.67	0.00
7,212.0	90.70	177.80	6,146.1	-839.4	-234.5	842.0	2.58	2.58	0.00
7,242.0	90.30	176.50	6,145.8	-869.4	-233.0	872.0	4.53	-1.33	-4.33
7,273.0	90.00	175.50	6,145.7	-900.3	-230.9	902.9	3.37	-0.97	-3.23
7,305.0	91.00	176.30	6,145.4	-932.2	-228.6	934.8	4.00	3.13	2.50
7,336.0	91.50	176.20	6,144.8	-963.2	-226.5	965.7	1.64	1.61	-0.32
7,367.0	91.70	176.90	6,143.9	-994.1	-224.7	996.6	2.35	0.65	2.26
7,398.0	92.00	176.50	6,142.9	-1,025.0	-222.9	1,027.5	1.61	0.97	-1.29
7,430.0	91.30	175.80	6,142.0	-1,056.9	-220.7	1,059.4	3.09	-2.19	-2.19
7,461.0	91.40	174.90	6,141.2	-1,087.8	-218.2	1,090.2	2.92	0.32	-2.90
7,492.0	91.50	176.50	6,140.5	-1,118.7	-215.9	1,121.1	5.17	0.32	5.16
7,524.0	91.80	176.70	6,139.5	-1,150.7	-214.0	1,153.0	1.13	0.94	0.63
7,555.0	90.90	176.20	6,138.8	-1,181.6	-212.1	1,183.9	3.32	-2.90	-1.61
7,586.0	90.00	175.50	6,138.6	-1,212.5	-209.9	1,214.8	3.68	-2.90	-2.26
7,618.0	90.20	175.10	6,138.5	-1,244.4	-207.2	1,246.7	1.40	0.63	-1.25
7,649.0	89.80	175.60	6,138.5	-1,275.3	-204.7	1,277.5	2.07	-1.29	1.61
7,680.0	89.30	176.70	6,138.8	-1,306.2	-202.6	1,308.4	3.90	-1.61	3.55

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Design:	Wellbore #1	Database:	Landmark

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
7,712.0	90.00	177.80	6,138.9	-1,338.2	-201.1	1,340.4	4.07	2.19	3.44
7,743.0	90.90	177.90	6,138.7	-1,369.2	-199.9	1,371.3	2.92	2.90	0.32
7,774.0	90.50	177.90	6,138.3	-1,400.2	-198.8	1,402.3	1.29	-1.29	0.00
7,805.0	90.70	177.90	6,138.0	-1,431.1	-197.7	1,433.3	0.65	0.65	0.00
7,834.0	90.30	177.80	6,137.7	-1,460.1	-196.6	1,462.2	1.42	-1.38	-0.34
7,866.0	91.00	177.80	6,137.4	-1,492.1	-195.3	1,494.2	2.19	2.19	0.00
7,897.0	90.50	177.90	6,137.0	-1,523.1	-194.2	1,525.1	1.64	-1.61	0.32
7,928.0	89.10	178.30	6,137.1	-1,554.0	-193.2	1,556.1	4.70	-4.52	1.29
7,960.0	89.00	178.30	6,137.6	-1,586.0	-192.2	1,588.1	0.31	-0.31	0.00
7,991.0	89.30	178.30	6,138.1	-1,617.0	-191.3	1,619.0	0.97	0.97	0.00
8,022.0	90.20	178.60	6,138.2	-1,648.0	-190.5	1,650.0	3.06	2.90	0.97
8,053.0	91.30	178.10	6,137.8	-1,679.0	-189.6	1,681.0	3.90	3.55	-1.61
8,085.0	92.20	178.30	6,136.8	-1,710.9	-188.6	1,713.0	2.88	2.81	0.63
8,116.0	91.80	178.10	6,135.7	-1,741.9	-187.6	1,743.9	1.44	-1.29	-0.65
8,147.0	90.00	178.10	6,135.3	-1,772.9	-186.6	1,774.9	5.81	-5.81	0.00
8,178.0	88.90	177.90	6,135.6	-1,803.9	-185.5	1,805.8	3.61	-3.55	-0.65
8,209.0	88.70	177.60	6,136.2	-1,834.8	-184.3	1,836.8	1.16	-0.65	-0.97
8,241.0	88.80	177.20	6,136.9	-1,866.8	-182.8	1,868.7	1.29	0.31	-1.25
8,271.0	88.80	176.70	6,137.5	-1,896.7	-181.2	1,898.7	1.67	0.00	-1.67
8,303.0	90.00	177.60	6,137.9	-1,928.7	-179.6	1,930.6	4.69	3.75	2.81
8,334.0	90.50	178.80	6,137.7	-1,959.7	-178.6	1,961.6	4.19	1.61	3.87
8,365.0	90.20	177.10	6,137.5	-1,990.7	-177.5	1,992.5	5.57	-0.97	-5.48
8,395.0	89.70	175.60	6,137.6	-2,020.6	-175.6	2,022.4	5.27	-1.67	-5.00
8,426.0	89.50	174.40	6,137.8	-2,051.5	-172.9	2,053.3	3.92	-0.65	-3.87
8,458.0	88.60	174.90	6,138.3	-2,083.3	-169.9	2,085.1	3.22	-2.81	1.56
8,489.0	88.20	176.50	6,139.2	-2,114.2	-167.6	2,116.0	5.32	-1.29	5.16
8,520.0	87.80	176.20	6,140.3	-2,145.2	-165.6	2,146.9	1.61	-1.29	-0.97
8,552.0	87.90	176.20	6,141.5	-2,177.1	-163.5	2,178.8	0.31	0.31	0.00
8,583.0	88.20	176.50	6,142.5	-2,208.0	-161.6	2,209.7	1.37	0.97	0.97
8,614.0	88.90	177.00	6,143.3	-2,238.9	-159.8	2,240.6	2.77	2.26	1.61
8,645.0	88.60	176.50	6,144.0	-2,269.9	-158.0	2,271.5	1.88	-0.97	-1.61
8,676.0	88.50	176.00	6,144.8	-2,300.8	-156.0	2,302.4	1.64	-0.32	-1.61
8,707.0	89.90	176.30	6,145.2	-2,331.7	-153.9	2,333.3	4.62	4.52	0.97
8,739.0	91.00	177.20	6,144.9	-2,363.7	-152.1	2,365.2	4.44	3.44	2.81
8,770.0	90.70	176.20	6,144.5	-2,394.6	-150.3	2,396.1	3.37	-0.97	-3.23
8,801.0	89.90	175.50	6,144.3	-2,425.5	-148.1	2,427.0	3.43	-2.58	-2.26
8,831.0	90.50	175.80	6,144.2	-2,455.4	-145.8	2,456.9	2.24	2.00	1.00
8,863.0	91.50	176.70	6,143.7	-2,487.4	-143.7	2,488.8	4.20	3.13	2.81
8,893.0	91.60	176.30	6,142.8	-2,517.3	-141.9	2,518.7	1.37	0.33	-1.33
8,925.0	92.20	176.50	6,141.8	-2,549.2	-139.9	2,550.6	1.98	1.88	0.63
8,956.0	92.60	175.80	6,140.5	-2,580.1	-137.8	2,581.5	2.60	1.29	-2.26
8,987.0	91.50	174.80	6,139.4	-2,611.0	-135.3	2,612.3	4.79	-3.55	-3.23
9,018.0	89.30	174.80	6,139.2	-2,641.9	-132.5	2,643.2	7.10	-7.10	0.00
9,049.0	89.20	174.60	6,139.6	-2,672.7	-129.6	2,674.0	0.72	-0.32	-0.65
9,081.0	89.70	176.20	6,139.9	-2,704.6	-127.0	2,705.9	5.24	1.56	5.00
9,112.0	91.10	177.20	6,139.7	-2,735.6	-125.2	2,736.8	5.55	4.52	3.23
9,143.0	90.70	176.50	6,139.2	-2,766.5	-123.5	2,767.7	2.60	-1.29	-2.26
9,174.0	90.20	175.60	6,138.9	-2,797.4	-121.4	2,798.6	3.32	-1.61	-2.90
9,205.0	90.30	176.00	6,138.8	-2,828.4	-119.1	2,829.5	1.33	0.32	1.29
9,237.0	89.80	177.00	6,138.8	-2,860.3	-117.2	2,861.4	3.49	-1.56	3.13
9,268.0	91.20	178.60	6,138.5	-2,891.3	-116.0	2,892.4	6.86	4.52	5.16
9,300.0	90.90	178.50	6,137.9	-2,923.3	-115.2	2,924.4	0.99	-0.94	-0.31
9,331.0	89.90	177.80	6,137.7	-2,954.2	-114.2	2,955.3	3.94	-3.23	-2.26

Company:	BONANZA CREEK ENERGY OPERATING	Local Co-ordinate Reference:	Well State Seventy Holes K-O-3HNB
Project:	SEC.3-T4N-R62W	TVD Reference:	WELL @ 4566.0ft (Ensign Rig #128 - RKB - 15')
Site:	State Seventy Holes K-O-3HNB Pad Sec.3-T4N-R62W	MD Reference:	WELL @ 4566.0ft (Ensign Rig #128 - RKB - 15')
Well:	State Seventy Holes K-O-3HNB	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
9,362.0	90.80	178.60	6,137.5	-2,985.2	-113.2	2,986.3	3.88	2.90	2.58
9,394.0	90.90	180.20	6,137.0	-3,017.2	-112.9	3,018.3	5.01	0.31	5.00
9,425.0	90.30	178.80	6,136.7	-3,048.2	-112.6	3,049.3	4.91	-1.94	-4.52
9,456.0	90.20	178.30	6,136.6	-3,079.2	-111.8	3,080.3	1.64	-0.32	-1.61
9,488.0	90.60	179.20	6,136.3	-3,111.2	-111.1	3,112.2	3.08	1.25	2.81
9,519.0	90.50	179.90	6,136.0	-3,142.2	-110.9	3,143.2	2.28	-0.32	2.26
9,550.0	90.10	180.60	6,135.9	-3,173.2	-111.0	3,174.2	2.60	-1.29	2.26
9,582.0	90.80	181.10	6,135.6	-3,205.2	-111.5	3,206.2	2.69	2.19	1.56
9,613.0	90.30	180.70	6,135.3	-3,236.2	-112.0	3,237.2	2.07	-1.61	-1.29
9,644.0	90.60	180.90	6,135.1	-3,267.2	-112.4	3,268.2	1.16	0.97	0.65
9,676.0	90.60	181.10	6,134.8	-3,299.2	-113.0	3,300.2	0.62	0.00	0.63
9,707.0	90.20	180.70	6,134.5	-3,330.2	-113.4	3,331.2	1.82	-1.29	-1.29
9,738.0	90.70	180.90	6,134.3	-3,361.2	-113.9	3,362.2	1.74	1.61	0.65
9,770.0	90.20	180.40	6,134.0	-3,393.2	-114.2	3,394.2	2.21	-1.56	-1.56
9,801.0	90.50	180.20	6,133.9	-3,424.2	-114.4	3,425.2	1.16	0.97	-0.65
9,832.0	90.00	178.30	6,133.7	-3,455.2	-114.0	3,456.2	6.34	-1.61	-6.13
9,864.0	90.20	178.50	6,133.7	-3,487.1	-113.1	3,488.2	0.88	0.63	0.63
9,895.0	89.60	177.90	6,133.7	-3,518.1	-112.1	3,519.2	2.74	-1.94	-1.94
9,927.0	89.90	177.00	6,133.9	-3,550.1	-110.7	3,551.1	2.96	0.94	-2.81
9,958.0	90.00	176.50	6,133.9	-3,581.0	-109.0	3,582.0	1.64	0.32	-1.61
9,989.0	89.60	176.20	6,134.0	-3,612.0	-107.0	3,613.0	1.61	-1.29	-0.97
10,021.0	90.00	175.60	6,134.1	-3,643.9	-104.7	3,644.8	2.25	1.25	-1.88
10,052.0	90.00	175.10	6,134.1	-3,674.8	-102.2	3,675.7	1.61	0.00	-1.61
10,082.0	88.60	174.40	6,134.5	-3,704.7	-99.4	3,705.6	5.22	-4.67	-2.33
10,114.0	88.60	174.20	6,135.3	-3,736.5	-96.3	3,737.3	0.62	0.00	-0.63
10,145.0	88.70	173.90	6,136.0	-3,767.3	-93.0	3,768.1	1.02	0.32	-0.97
10,176.0	88.50	174.10	6,136.7	-3,798.1	-89.8	3,798.9	0.91	-0.65	0.65
10,206.0	88.50	174.60	6,137.5	-3,828.0	-86.9	3,828.7	1.67	0.00	1.67
10,237.0	88.30	174.60	6,138.4	-3,858.8	-83.9	3,859.5	0.65	-0.65	0.00
10,267.0	89.10	174.80	6,139.1	-3,888.7	-81.2	3,889.4	2.75	2.67	0.67
10,298.0	89.50	175.10	6,139.5	-3,919.6	-78.4	3,920.2	1.61	1.29	0.97
10,329.0	89.60	175.10	6,139.7	-3,950.5	-75.8	3,951.1	0.32	0.32	0.00
10,360.0	90.00	175.50	6,139.8	-3,981.4	-73.2	3,981.9	1.82	1.29	1.29
10,391.0	90.40	175.50	6,139.7	-4,012.3	-70.8	4,012.8	1.29	1.29	0.00
10,422.0	91.30	175.80	6,139.2	-4,043.2	-68.5	4,043.7	3.06	2.90	0.97
10,453.0	91.70	175.60	6,138.4	-4,074.1	-66.1	4,074.6	1.44	1.29	-0.65
10,485.0	92.00	175.10	6,137.4	-4,106.0	-63.5	4,106.4	1.82	0.94	-1.56
10,516.0	91.50	175.60	6,136.4	-4,136.8	-61.0	4,137.3	2.28	-1.61	1.61
10,547.0	91.70	176.00	6,135.6	-4,167.7	-58.8	4,168.1	1.44	0.65	1.29
10,579.0	91.30	176.70	6,134.7	-4,199.7	-56.7	4,200.0	2.52	-1.25	2.19
10,610.0	91.60	176.30	6,134.0	-4,230.6	-54.8	4,230.9	1.61	0.97	-1.29
10,641.0	91.50	178.30	6,133.1	-4,261.5	-53.4	4,261.9	6.46	-0.32	6.45
10,671.0	90.10	177.90	6,132.7	-4,291.5	-52.4	4,291.8	4.85	-4.67	-1.33
10,703.0	89.90	177.60	6,132.7	-4,323.5	-51.1	4,323.8	1.13	-0.63	-0.94
10,734.0	90.20	177.20	6,132.7	-4,354.5	-49.7	4,354.8	1.61	0.97	-1.29
10,765.0	89.10	176.70	6,132.9	-4,385.4	-48.1	4,385.7	3.90	-3.55	-1.61
10,784.0	88.40	176.30	6,133.3	-4,404.4	-46.9	4,404.6	4.24	-3.68	-2.11
10,836.0	88.40	176.30	6,134.7	-4,456.3	-43.6	4,456.5	0.00	0.00	0.00
BHL 470'FSL, 2636'FEL									

Company:	BONANZA CREEK ENERGY OPERATING	Local Co-ordinate Reference:	Well State Seventy Holes K-O-3HNB
Project:	SEC.3-T4N-R62W	TVD Reference:	WELL @ 4566.0ft (Ensign Rig #128 - RKB - 15')
Site:	State Seventy Holes K-O-3HNB Pad Sec.3-T4N-R62W	MD Reference:	WELL @ 4566.0ft (Ensign Rig #128 - RKB - 15')
Well:	State Seventy Holes K-O-3HNB	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Checked By: _____	Approved By: _____	Date: _____
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